**YEAR 7 UNIT ROTATIONS 2020-2021**

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| Class | Teacher | INTRODUCTION (4 LESSONS) plus Bunsen lesson from 7I | ROTATION 1 | | | Tes  t on UNITS AEI (base  line test in first rotation) | ROTATION 2 | | | TEST  UN  I  T  S  BGJ | ROTATION 3 | | | TEST UNITS DFK | ROTATION 4 | | | Y  7  EXAM  IN  Exam  WEEK  based on all units taught |
| 7A | LC | 7A  Test | 7E | 7I | 7G  Test | 7J | 7B  Test | 7F | 7K  Test | 7D | 8E | 7L  Test | 7H |
| 7B | CR | 7E | 7A  Test | 7I | 7B  Test | 7G  Test | 7J | 7D | 7F | 7K  Test | 7L  Test | 7H | 8E |
| 7C | SP | 7I | 7E | 7A  Test | 7J | 7B  Test | 7G  Test | 7K  Test | 7D | 7F | 7H | 8E | 7L  Test |
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| 7R | SKH | 7A  Test | 7I | 7E | 7J | 7B  Test | 7G  Test | 7K  Test | 7D | 7F | 7H | 8E | 7L  Test |
| 7S | DM | 7E | 7I | 7A  Test | 7G  Test | 7J | 7B  Test | 7F | 7K  Test | 7D | 8E | 7L  Test | 7H |
| 7V | CR | 7A  Test | 7E | 7I | 7B  Test | 7G  Test | 7J | 7D | 7F | 7K  Test | 7L  Test | 7H | 8E |

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**Please read sheet below**

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| 7A | **Cells ( Tissue and Transplants)**  **Cells and organisation**   * cells as the fundamental unit of living organisms, including how to observe, interpret and record cell structure using a light microscope * the functions of the cell wall, cell membrane, cytoplasm, nucleus, vacuole, (mitochondria and chloroplasts) * the similarities and differences between plant and animal cells * the role of diffusion in the movement of materials in and between cells * the structural adaptations of some unicellular organisms * the hierarchical organisation of multicellular organisms: from cells to tissues to organs to systems to organisms | 8E | **Water (Solutions)**  1 Describe a chemical test for water.   * Describe and explain, in outline, the purification of the water supply by filtration and chlorination. * State some of the uses of water in industry and in the home. * Describe the composition of clean air as being a mixture of 78% nitrogen, 21% * oxygen and small quantities of noble gases, water vapour and carbon dioxide. * State the common air pollutants as carbon monoxide, sulfur dioxide and oxides of nitrogen, and describe their sources. * State the adverse effect of common air pollutants on buildings and on health. * Describe the formation of carbon dioxide:   + as a product of complete combustion of carbon-containing substances   + as a product of respiration   + as a product of the reaction between an acid and a carbonate   + as a product of thermal decomposition. * Describe the rusting of iron in terms of a reaction involving air and water, and simple methods of rust prevention, including paint and other coatings to exclude oxygen. * Describe the need for nitrogen-, phosphorus- and potassium-containing * Fertilisers. |
| 7B | Reproduction (Sex and Science) - **Reproduction**   * reproduction in humans (as an example of a mammal), including the structure and function of the male and female reproductive systems, menstrual cycle (without details of hormones), gametes, fertilisation, gestation and birth, to include the effect of maternal lifestyle on the foetus through the placenta * reproduction in plants, including flower structure, wind and insect pollination, fertilisation, seed and fruit formation and dispersal, including quantitative investigation of some dispersal mechanisms | 7I | **Energy resources** (Energy and sustainable living)   * What is an energy resource? * What is a fuel? Fuels store chemical. Energy. Fuels are substances which burn to release energy * How to use a Bunsen burner and heating apparatus safely (assessing risk) * Know: How to make measurements safely. * Understand: The importance of safety rules when using a Bunsen burner. * Be able to: decide which factors/variables need to be controlled to make a fair comparison |
| 7D | **Variation and classification (Classified)**   * describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals * give reasons for classifying plants and animals based on specific characteristics * recognise that living things have changed over time * that fossils provide information about living things that inhabited the Earth millions of years ago * recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents * identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution | 7J | **Electrical circuits**   * **associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit** * **compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches** * **use recognised symbols when representing a simple circuit in a diagram**   **Current electricity**   * electric current, measured in amperes, in circuits, series and parallel circuits, currents add where branches meet and current as flow of charge * potential difference, measured in volts, battery and bulb ratings; resistance, measured in ohms, as the ratio of potential difference (p.d.) to current * differences in resistance between conducting and insulating components (quantitative) |
| 7E | **Acids and alkalis**   * defining acids and alkalis in terms of neutralisation reactions * the pH scale for measuring acidity/alkalinity; and indicators * reactions of acids with metals to produce a salt plus hydrogen * reactions of acids with alkalis to produce a salt plus water | 7K | **Forces and their effects - Forces**   * forces as pushes or pulls, arising from the interaction between 2 objects * using force arrows in diagrams, adding forces in 1 dimension, balanced and unbalanced forces * moment as the turning effect of a force * forces: associated with deforming objects; stretching and squashing – springs; with rubbing and friction between surfaces, with pushing things out of the way; resistance to motion of air and water * forces measured in newtons, measurements of stretch or compression as force is changed |
| 7F | **Simple chemical reactions (Bubbles, bangs and burning) the concept of a pure substance**   * mixtures, including dissolving * diffusion in terms of the particle model * simple techniques for separating mixtures: filtration, evaporation, distillation and chromatography * the identification of pure substances | 7L | **The solar system and beyond**  **Space physics**   * gravity force, weight = mass x gravitational field strength (g), on Earth g=10 N/kg, different on other planets and stars; gravity forces between Earth and Moon, and between Earth and sun (qualitative only) * our sun as a star, other stars in our galaxy, other galaxies * the seasons and the Earth’s tilt, day length at different times of year, in different hemispheres * the light year as a unit of astronomical distance |
| 7G | **Particle model of solids, liquids and gases (What a waste!)**   * the properties of the different states of matter (solid, liquid and gas) in terms of the particle model, including gas pressure * changes of state in terms of the particle model | 7H | **Materials from the Earth**   * the composition of the Earth * the structure of the Earth * the rock cycle and the formation of igneous, sedimentary and metamorphic rocks * Earth as a source of limited resources and the efficacy of recycling * the composition of the atmosphere * the production of carbon dioxide by human activity and the impact on climate |